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Journal of the Society of Arts.

FRIDAY, MAY 8, 1857.

NOTICE TO MEMBERS AND INSTITUTIONS.

The prizes awarded by the Society's Examiners to the successful Candidates at the June Examination in London will be distributed on the morning of Tuesday, the 23rd of June, at the Society's House in the Adelphi.

The Society's Annual Dinner will take place at the Crystal Palace in the afternoon of the same day. Lord Stanley, M.P., will preside.

The Sixth Annual Conference of the Representatives from Institutions in Union with the Society, is appointed to be held at the Society's House on Wednesday the 24th of June.

The Annual General Meeting for receiving the report of the Council and the Treasurer's statement of receipts, payments, and expenditure during the past year, and also for the Election of Officers, will, in accordance with the Bye-Laws, take place at 4 o'clock on the same day.

EXAMINATIONS PRIZE FUND.

The following donation has been made since the last announcement:—

Titus Salt, Esq. 10 Os. 0d.

SPEECHES AND ADDRESSES OF H.R.H. PRINCE ALBERT, PRESIDENT OF THE SOCIETY OF ARTS.

At the annual dinner of the Society for the Encouragement of Arts, Manufactures, and Commerce, in the Crystal Palace, on the 24th of June, 1856, Lord Ashburton, Vice-President of the Society, in his address from the chair, observed:—"To induce the tired mechanic to study during his hours of rest, he must have some inducement beyond that of acquiring knowledge for its own sake; he must be paid for it in wages or in consideration, and that inducement he cannot hope for from ignorant employers. Prince Albert has felt this difficulty; a difficulty not within the compass of this Society to remove: and he has brought up succour to us from other quarters. He assigned to science and high art its due place in the hierarchy of society; he has encouraged our scientific and artistic institutions, but above all he has adopted that course which among Englishmen is of most avail,—he has attended our public meetings, and has in his own person appealed to us to reform ourselves. These ap-

peals at the time produced their effect, and would continue to work upon the public mind, if this Society would in its own interest, and in the interest of the cause it espouses, print and circulate Prince Albert's addresses for our use."

At a meeting of the Council of the Society of Arts, held on the 23rd of July, 1856, the foregoing suggestion was taken into consideration, when the following minute was passed:—

"That Lord Ashburton's suggestion, to collect and publish the addresses, speeches, and letters of H.R.H. the President of the Society, having been considered, it was resolved:—That a collection be published, not at the risk of the Society, but by subscription among the members, the Institutions in Union, and the public at large, as being the best means of showing the public sense of the efforts made by his Royal Highness to promote social progress and the Encouragement of Arts, Manufactures, and Commerce, the chartered objects of the Society.

"That two editions of the collection be published under the sanction of the Society, the one a cheap edition for wide distribution, and the other a library edition.

"That members and others wishing to become subscribers be requested to transmit to the Secretary a statement of the number of copies they subscribe for, with the amount of their subscriptions."

It is proposed to publish the Library Edition at half-a-guinea, and the cheap edition at three-pence each, or one pound per hundred.

Subscriptions to promote the above object will be received by the Secretary.

The following is a list of the subscribers whose names have been already sent in:—

Aberdein, Robert Henry, Honiton.
Ackroyd and Son, Halifax.
Acland, Henry, M.D., F.R.S., Oxford.
Agnew, Thomas, Manchester.
Ainsworth, Peter, Manchester.
Allenheads, Thomas Sopwith, Haydon-bridge, Carlisle.
Althorp, James, Stamford.
Amschell, Hobler, and Co., Manchester.
Armitage, Brothers, Huddersfield.
Armitage, E., Manchester.
Ashton, Thomas, Manchester.
Ashworth, Edmund, Manchester.
Ashworth, Henry, Manchester.
Ashworth, T. Spring-gardens, Manchester.
Avison, Thomas, F.S.A., Liverpool.
Baker, Charles John, 2, Bloomsbury-place, London.
Bagnall, Charles, Golds-hill, West Bromwich.
Baines, Edward, Leeds.
Bannerman, David, Manchester.
Bannerman, James S., Manchester.
Bannerman, John, Manchester.
Barbour, Robert, Manchester.
Barfam, Hugh, Manchester.
Barnett, Miss M. G., 5, Gloucester-terrace, Regent's-park.
Bates, Joshua, 21, Arlington-street.
Bazley, Henry, Cheapside, Manchester.
Bazley, Thomas, Manchester.
Bazley, Thomas Seb., Manchester.

- Beaumont, John, (Dalton) near Huddersfield.
 Beaumont, Joseph, and Sons, Huddersfield.
 Bellhoun, D., Manchester.
 Bennoch, Francis, 17, Wood-street.
 Bentley, James, Cheshunt, Herts.
 Bettridge, James, Birmingham.
 Boileau, Sir John P., Bart., Upper Brook-street, Grosve-
 nor-square.
 Boulton, Joseph, Grove-park, Liverpool.
 Bradbury, Henry, Whitefriars.
 Bradley, William, Manchester.
 Brady, Antonio, Admiralty, Somerset-house.
 Brady, John, Esq., M.P., Warwick-terrace, Pimlico.
 Brickwood, J. S., Upper Brunswick-place, Brighton.
 Briggs, N., Bradford.
 Briggs, Thos., Port-street, Manchester.
 Brook, Charles, and Sons, Huddersfield.
 Brook, Jonas, and Brothers, Huddersfield.
 Brooke, John, and Sons, Huddersfield.
 Brown, Samuel, 11, Lombard-street.
 Burridge, Henry, Kirkcaldy (Provost).
 Burton, Decimus, Spring-gardens.
 Butterfield, William.
 Butterworth, —, Huddersfield.
 Callonder, W. R., Manchester.
 Capes, H. N., Manchester.
 Cartmell, James, Christ's College, Cambridge.
 Chadwick, Edwin, Montague-villas, Richmond.
 Challis, Alderman.
 Chance, R. L. jun., Highfield-house, Birmingham.
 Charley, William, J.P., Seymour-hill, Belfast.
 Chrimmes, Richard, Rotherham.
 Clarke, Plummer and Co., Newcastle-on-Tyne.
 Clayton, Nathaniel, Lincoln.
 Clayton, Shuttleworth, and Co., Lincoln.
 Clegg, T., Corporation-street, Manchester.
 Clifton, R. C., Manchester.
 Clowes, George.
 Coleman, J. J., Norwich.
 Collier, W., and Co., Manchester.
 Cook, Alfred, 27, Park-street, Bath.
 Cook, Charlotte Allen, 27, Park-street, Bath.
 Cook, Emma Victoria Cadbury, 27, Park-street, Bath.
 Cook, George Henry, 27, Park-street, Bath.
 Cook, Louisa.
 Cook, Robert Allen, 27, Park-street, Bath.
 Cook, Robert, 27, Park-street, Bath.
 Cottrell, Thomas, Esq., 50, Eaton-square.
 Cowper, The Hon. W., 12, Curzon-street.
 Craven, Joshua, and Sons, Bradford.
 Creed, W., 53, Conduit-street, Bond-street.
 Crewdson, G. B., Kendal.
 Crosse, Mrs. Andrew.
 Crossland, G. and Sons, Huddersfield.
 Crum, Walter, Thornliebank, Glasgow.
 Davies, John Birt, M.D., Birmingham.
 Davis, Valentine, Furnace-house, Carmarthen.
 Davison, Robert, C.E., 8, London-street, City.
 Dawes, John S., Smithwick-house, Birmingham.
 Dawes, Richard, Deanery, Hereford.
 Dearden, W., Nottingham.
 Dewhurst, Thomas, Bradford.
 Dewhurst, J. and Sons, Bradford.
 Dickenson, Henry, Severn-house, Coalbrookdale.
 Dilke, C. Wentworth, 76, Sloane-street, Chelsea.
 Dixon, Rev. J. J., Hindley, near Wigan.
 Dove, Percy M., R. Insur. Com., Liverpool.
 Dowding, Frederick, 15, Vineyards, Bath.
 Drewhurst, Geo. C., Manchester.
 Durishee, York-street, Manchester.
 Eastlake, Sir C. L., Pres. R.A., 7, Fitzroy-square.
 Edgington, Benjamin, Battersea.
 Edwards, George, Rowcroft-house, Stroud.
 Ekin, Thomas, Grantham.
 Elkington, Geo. R., Newhall-street, Birmingham.
 Enfield, William, Nottingham.
 Evill, W.
 Fairbairn, Thomas, Manchester.
 Fairbairn, William, Manchester.
 Fairbairn, William, F.R.S., Manchester.
 Fauntleroy, Robert J., Potters-fields, Tooley-street.
 Fawcett, William, Clarke-house, Sheffield.
 Fawkener, John, Winfield, Birmingham.
 Fayolo, Andrew, Manchester.
 Felkin, Thomas, Nottingham.
 Fenton, J. C., Huddersfield.
 Fletcher, Samuel, Manchester.
 Forbes, Henry, Bradford.
 Fownes, Henry, Battersea.
 Fownes, Edward, Wandsworth.
 Freeman, John, Huddersfield.
 Gaddison, F. E., Manchester.
 Garnett, J. W. and Co., Bradford.
 Gifford, The Rev. Edwin Hamilton, King Ed. Sch.,
 Birmingham.
 Gillibrand, Philip, Manchester.
 Gladstone, Murray, Manchester.
 Glynn, Joseph, F.R.S., 28, Westbourne-park-villas.
 Goldsmith, David, Bury St. Edmunds.
 Graham, Peter, 37 and 38, Oxford-street.
 Grey, General the Hon. Charles.
 Grindrod, James N., Manchester.
 Guest, John, Rotherham.
 Hanhart, Michael, Charlotte-street, Fitzroy-square.
 Hanson, William, High-street, Windsor.
 Harrison, B., Bradford.
 Hargreave, Oliver, Langley-house, Abbots Langley, Herts.
 Hartley, James, Glass Works, Sunderland.
 Hatherley, Henry Wright, Lawn, Cheltenham.
 Hatton, James, Manchester.
 Hawkes, Henry, Alderman, Birmingham.
 Haymann, L., West Bridge Ford, Nottingham.
 Hebbert, John B., Vice President Mid. Inst., Birmingham,
 67, Hagley-road, Edgbaston.
 Heelis, S. (Mayor of Salford), Manchester.
 Henry, A. J., and Co., Manchester.
 Henry, A. and S., and Co., Huddersfield.
 Heron, Joseph, Manchester.
 Heywood, A. H., Manchester.
 Heywood, Oliver, Manchester.
 Heywood, P., Manchester.
 Hickson, Chas., and Co., Manchester.
 Hickson, Charles, Manchester.
 Hirth, James, Manchester.
 Holland, William, 23, Mount-street.
 Holmes, Herbert M., Derby.
 Holmes, Messrs., Derby.
 Holmes, The Rev. S., the Vicarage, Huddersfield.
 Hope, Henry Thomas, 116, Piccadilly.
 Horn, S. J., Manchester.
 Horsfall, Thomas Berry, M.P., Liverpool.
 Horsfall, William, Manchester.
 Houldsworth, H., Manchester.
 Howson, Rev. J. S., Liverpool.
 Hoyles, Thos., and Son, Manchester.
 Hume, Rev. A., D.C.L., LL.D., Liverpool.
 Huth and Fisher, Huddersfield.
 Hunter, J. C., Manchester.
 Hunt, Robert, Museum, Jermyn-street.
 Hyett, W. H., Painswick, Gloucestershire.
 Jones, C. H., Huddersfield.
 Jones, James, Falcon-house, Oldham.
 Keingsley, Reuss, Manchester.
 Keith, Wm., Cross-street, Manchester.
 Kissell, George, Manchester.
 Kiteley, Joseph, Kidderminster.
 Knoop, L., Manchester.
 Lamp, Thomas B., Manchester.
 Langton, William, Manchester.
 Lansdowne, Marquis of.
 Lawden, Caleb, Elsbow House, Handsworth, Birmingham.
 Lowe, George, Esq., F.R.S., Finsbury.

- Lawrell, John George B., Esq., 7, Suffolk-street, Pall Mall.
 Leather, John Towleron, Leventhorpe Hall, Leeds.
 Le Breton, Sir Thomas, Bailiff of Jersey.
 Lee, Alfred, Lockwood, Huddersfield.
 Lee, Tootal Broadhurst, Manchester.
 Letsworth, J. C. W. Lyon, Manchester.
 Levi, Leoni, 21, New Bridge-street, Blackfriars.
 Leydale, John, Manchester.
 Linch, Chambers, and Co., Manchester.
 Lingen, Ralph R.W., 19, Gloucester-terrace, Hyde-park.
 Longstaff, George D., Upper-Thames-street.
 Lowenthal, Brothers, Huddersfield.
 Lucy, W., Birmingham.
 Mackie, Jarvie, Manchester.
 Mallinson and Son, George, Huddersfield.
 Manchester, J. P. (Lord Bishop), Manchester.
 Martin, R., Reigate.
 Mayson, John (J. I. M.), Manchester.
 Mayson, J. Schofield, Manchester.
 McClure, John, Manchester.
 McComel, — Manchester.
 McConnell, J. H., Manchester.
 Mechanics' Institution, Holmfirth.
 Mechanics' Institution, Huddersfield.
 Mechanics' Institution, Lockwood.
 Milligan, Robert, Bradford.
 Minton, Herbert, Belmont, Torquay.
 Moore, John, Buckland-terrace, Plymouth.
 Moore, William, Huddersfield.
 Moorsom, Admiral, Euston Station.
 Morris, William, Manchester.
 Moss, William Henry, Hull.
 Murray, Mrs., Bryanstone-square.
 Myers, George, Lambeth.
 Nicholls, Benjamin, Manchester.
 Noyre, Walter J., Kings Lynn.
 Owen, Richard, British Museum.
 Pakington, Sir John, M.P., Westwood-park.
 Palmerston, Viscount, M.P.
 Pepper, John H., Polytechnic Institution, London.
 Platt, James, Hartford-house, Oldham.
 Playfair, Dr. Lyon, F.R.S., Devonshire-terrace, Notting hill.
 Potter, Ed., Manchester.
 Potter, Sir John, M.P., Abney-hall, Cheadle, Manchester.
 Powell, Samuel, Knaresborough.
 Potter, Thomas B., Manchester.
 Preston, William, Vernor-street, Liverpool.
 Printing Co., The Strines, Manchester.
 Pryor, Edward Lyon, Manchester.
 Pryor, William S., 23, Broad-street-buildings.
 Pulling, The Rev. J., D.D., Master of Corpus Christi College, Cambridge.
 Purvis, Prior, Blackheath.
 Radcliff, Charles, Wyddington, Edgbaston.
 Ramsbotham, Dr., Huddersfield.
 Rand, William, Bradford.
 Reiss, James, Manchester.
 Richardson, Thomas, New Bridge-street, Newcastle-on-Tyne.
 Rigg, Rev. Arthur, Chester.
 Robinson, George, Wolverhampton.
 Robinson, H., Huddersfield.
 Robson, Robert, Esq., Richmond, Yorkshire.
 Royal Institution, Liverpool. David Thomson, M.D., Hon. Sec., for Lit. and Phil. Society.
 Ryland, Arthur, Birmingham.
 Ryland, Miss, Barford-hill, Warwick.
 Salisbury, The Rev. The Dean of, F.R.S., Salisbury.
 Salt, Titus, Bradford.
 Samen, Leopold, Manchester.
 Saul, Chas. J. Booth-street, Manchester.
 Sawers, John, Stirling (Provost).
 Schines N. Souchargs, and Co., Manchester.
 Schwabe, Adolph, Manchester.
 Schwann, Kell, and Co., Huddersfield.
 Shaw, Holroyd, and Shaw, Huddersfield.
 Shea, John, Cork.
 Shepley, Miss, Wandsworth.
 Simpson, Thompson, & Co., Manchester.
 Slagg, John, Manchester.
 Smirke, Edward, 72, Grosvenor-street.
 Smith, James Scott, Distillery, Whitechapel-road.
 Spence, William, F.R.S., 18, Lower Seymour-street, Portman-square.
 Spent, Wm., 6, Park-place-villas.
 Spiers, Richard James, Alderman, Oxford.
 Sutcliffe, W., Bradford.
 Tartt, W. M., (Hon. L. Sec.) Sandford-place, Cheltenham.
 Taylor, Garnett, and Co., Manchester.
 Thornton, Samuel, The Elms, Highgate, Birmingham.
 Tolson, James, and Son, Huddersfield.
 Turner, J. Aspinall, Manchester.
 Tweedale, James, Rochdale.
 Twining, T., jun., Twickenham.
 Twist Co., The, Oxford-road, Manchester.
 Walker, Thomas, Penshire-road, Birmingham.
 Wampen, Dr., 91, Upper-Ebury-street, Pimlico.
 Waterhouse, John, F.R.S., Halifax.
 Watkins, W., Manchester.
 Watney, D.
 Watney, D., jun.
 Watney, John.
 Watts, James, Mayor of Manchester.
 Webster, John, Aberdeen (Provost).
 Welsford, George Culverwell, Weymouth.
 Westhead, W. B., Manchester.
 Whicheord, John, Maidstone.
 Whitworth, Joseph, Manchester.
 Willanc, William, Huddersfield.
 Willans, William, and Co., Huddersfield.
 Willens, B., Manchester.
 Williams, David, D.D., the Rev. the Vice Chancellor of the University of Oxford, New College, Oxford.
 Williams, E., West Stockwell-street, Colchester.
 Wilson, George F., Belmont, Vauxhall.
 Wilson, George, Manchester.
 Wilson, John.
 Wilson, Mrs. W., Wandsworth.
 Winfield, R. M., Cambridge-street, Birmingham.
 Winkworth and Procter, Manchester.
 Wolf, A. L., Manchester.
 Woodcock, Henry, 70, St. Giles, Norwich.
 Wood and Wright, Manchester.
 Wragg, Francis, Broom-hall-park, Sheffield.
 Wrigley, James, Netherton, near Huddersfield.
 Wrigley, J. and T. C. and Co., Huddersfield.
 Yates, Edwin, Highfield, Edgbaston, Birmingham.
 Yorke, Grantham, The Rev., Birmingham.

N.B.—This list being printed from signatures, some of which were not very legible, the Secretary will feel obliged by notice of any error.

CONVERSAZIONE.

The Second Conversazione of the present Session took place on Wednesday evening last, when the pictures and sketches of the late Thomas Seddon were collected for exhibition under the superintendence of the Committee for the "Seddon Subscription Fund," and of Mr. W. M. Rossetti, the Honorary Secretary.

Several cabinet pictures of the French School from the gallery of J. Anderson Rose, Esq., were kindly lent by that gentleman. Original drawings, by M. Callow, H. Gastineau, J. D.

Harding, W. Hunt, D. McKewan, Oakley, &c., together with copies by the Chromo-lithographic process, were exhibited by Messrs. George Rowney and Company, and in many instances the copies were placed by the side of the originals, so as to show the perfection to which the art of reproduction has arrived.

Specimens of photographic miniatures, coloured in transparent colours, were contributed by Messrs. Lock, of Regent-street, and photographic portraits of Members of the present Parliament by Mr. Mayall. Some portfolios of photographs of Indian temples, &c., were contributed by the East India Company.

The plans for metropolitan improvements and the embankment of the Thames, proposed by Mr. Francis Bennoch, were examined with much interest.

In the upper suite of rooms were specimens of philosophical and mechanical apparatus, including a model of Rennie's disc engine, and the new altitude and azimuth instrument manufactured for the East India Company, by Messrs. Elliott, Brothers, as well as sets of portable apparatus for illustrating numerous electrical phenomena, by Messrs. Murray and Heath. Messrs. R. Knight and Co. exhibited the new telegraphic signal-bells invented by Mr. C. V. Walker, F.R.S., for ordinary train signalling, and for special communication in case of accident on railways.

The recording telegraph intended to be used in connection with the Atlantic cable was shown in action by Messrs. Siemens, a specimen of the cable itself being also exhibited by Messrs. Newall. Mr. Ladd, of Chancery-lane, performed some brilliant experiments with a Bentley's induction coil; and Mr. Wheeler showed his new and powerful Gas Carbon battery. The Nautilus diving apparatus, exhibited by the Nautilus Company, was shown in action.

Specimens of carving for the Sultan's new palace at Constantinople, were contributed by Mr. Rogers, as well as some photographs of Jerusalem, and a fragment of engraved marble from the Mosque of Omar.

Mr. B. Ferrey exhibited specimens of a new and simple method of producing ornamental surfaces in stucco, during the ordinary operation of plastering.

Some Paraffine Candles, obtained from Irish Peat, and affording a brilliant light, were exhibited by Messrs. J. C. and J. Field, of Wigmore-street. Pianofortes, of novel and improved construction, were exhibited by Messrs. Dewrance, Owen and Stodart, and F. Priestley. The collection of patented inventions of the past year was also thrown open.

Mr. RUSKIN delivered a most able and interesting address upon the artistic works of the late Thomas Seddon, which was listened to throughout with the most marked attention, by the large assembly. He commenced by remarking that it was no part of his intention, in appear-

ing before them, to enter into a general consideration of the views which had actuated the formation of the committee which had been set on foot, relative to the purchase by the nation of Seddon's great picture of Jerusalem, which was now exhibited before them. There were associated in that committee men of various opinions, and of various professions, and there was such a contrast in the characters of the individuals who had united to further this object, that it could hardly be expected that he should appear before this meeting in any way as the exponent of all their various views. He might, perhaps, be allowed, in some measure, to express the views of that portion of the committee who began the movement, with whom he entirely sympathised. He believed that some objection had been taken to the idea of placing this picture in the national collection of paintings, because it was said that they sought to bring it forward as a unique picture, or as one so admirable that they were never likely to look upon such again. For his own part he differed from that view. It was not because he considered it remarkable, but because he considered it *not* remarkable, that he wished this picture to become the property of the nation; he regarded it as the type of a class of pictures and of works which might be understood and imitated by other men, and the understanding of which would be advantageous to the nation in future. In like manner it had been said that it was sought, as it were, to canonise Seddon as a saint—immortalise him as a hero—that they wished to bring forward his death as a martyrdom to the cause of painting. But it was not so. The death of Seddon had nothing remarkable or extraordinary in its character, but was merely a type of a class of deaths which were being continually offered up to the nation by great and good men, but which, in this case, a concurrence of pathetic circumstances justified them in bringing before the public notice. The simple sacrifice of life had in it nothing unusual—it was, on the contrary, a melancholy thing to reflect how continually we all of us lived upon the lives of others, and that in two ways—viz., upon lives which we take, and upon lives which are given. It was a terrible expression to use—this of taking life, but it was a true one. We took life in all cases in which, either for higher wages, or by the compulsion of commercial pressure, men were occupied, without sufficient protection or guardianship, in dangerous employments, involving an average loss of life, for which life we paid thoughtlessly in the price of the commodity, which, so far, was the price of blood. Nay, more than this, it was a well-recognized fact that there was scarcely an art or a science in the present day, in which there was not some concomitant circumstance of danger or disease, which science had not striven to abate proportionably with the endeavours to advance the skill of the workmen. And thus, though we had abolished slavery, we literally bargained daily for the lives of our fellow men, although we should shrink with horror at the idea of purchasing their bodies; and if these evils, arising partly from pressure of population, but more from carelessness and cruelty in masters and consumers, from desire of cheapness, or blind faith in commercial necessities—if these evils went on increasing at the rate it seemed but too probable they would, England would soon have to add another supporter to her shield. She had good right still to her lion, never more than now. But she needed, in justice, another, to show that if she could pour forth life blood nobly, she could also drink it cruelly; she should have not only the lion, but the vampire. These remarks applied to what was only too justly termed the taking of life; but in other cases lives were given, as by the active and enterprising explorer of unknown regions, and the brave and devoted soldier and sailor. These sacrifices we might accept, if the cause in which they were offered was a just one. He had to bring before them that evening an instance of such a sacrifice, and to explain and justify its cause.

Mr. Ruskin then graphically reviewed the progress in the art of painting from the 8th and 10th centuries up to the time of Raphael, and exhibited some of the early specimens of English art, which, by their quaintness of design and colouring, created considerable amusement amongst the audience. He also called attention to remarkable specimens around the room of the pre-Raphaelite style, tracing the development of that style by an analysis of the state of Italian art when the pre-Raphaelite principle first began to operate upon it. The whole secret of the progress of Italian art from the 8th century up to the time of Raphael, was to be found in the simplicity and truthfulness of the principle followed throughout—simplicity of principle and earnestness of purpose. Art was then unembarrassed by the disputes of critics. There was an intense religious purpose at the root of it, and an intense simplicity of approbation in the minds of the people. They received all that was done frankly, and frankly admired it. There was richness and truth in the decoration, and they never restricted their inventive genius for fear that anything might be overloaded. The richer their work was the better they liked it. They made their walls as gorgeous as they could; they innocently and always loved bright colours and beautiful forms, striving, however, chiefly to add more and more of truthfulness to their representations. It was not the pursuit of beauty that led from "The Serpent beguiling Eve" up to the Madonna of Raphael, but it was the greater accuracy of perception, and greater veracity of the lines, which led the artist on. He need not dwell upon the powers which the Italians had, up to the 15th century, of bringing forward the greatest arts. After that period both the principles to which he had adverted were broken through. They reached the climax of power and then yielded to the abandonment of the principles which led to it. They lost their love of truth, and pursued beauty instead of it. They lost their earnestness of heart, and aimed only at amusement. Hence, in Italy an art falsely beautiful, and in Flanders an art meanly imitative. Modern pre-Raphaelitism was a reaction against both these errors. It sought veracity more than beauty; but such veracities only as were useful to mankind. Pre-Raphaelitism was simply to be defined as "the pursuit of truth in art, with a useful purpose," and one of the main advantages of its system was to bring into service minds of every class; for, in all ages, there were the two great classes of artists, men of inventive minds, and men of more or less prosaic minds; and the great danger of following the theory of beauty only, was to make the matter of fact minds comparatively useless, and yet they were the most common amongst them. There were more men capable of pursuing a simple problem, or representing a simple fact, than there were men capable of following at any distance in the path of the great inventive painters. The object of a nation should be to make all artists equally useful and happy, and to bring the gift of every man into effective service, and make his life honourable, worthy, and useful to the nation to which he belonged. The pre-Raphaelites had been regarded as one class of men only. He wished to explain to them that they were composed of two entirely separate classes. There were the poetical pre-Raphaelites and the prosaic pre-Raphaelites, and the prosaic were the more important of the two. The spirit of the present age was strictly scientific, and all that they could do more than was done in the earlier ages must be on the side of truth, and could not be on the side of imagination. The earlier times were what the brilliant, active imagination of youth was compared to the seriousness and earnestness of old age, when it was earnest—for frivolous old age was the most frivolous of all—but it was, most true that as they were aged amongst nations so they might become greater than those which had gone before them, if they brought out the peculiar character which God had impressed upon them. The peculiar power of poetry upon them at present was

more or less lost from the quantity supplied. They did not want an unlimited number of poetical fancies, but they wanted a continuous advance in the knowledge of facts; and, without denying the use of all that had been done by our great poets, still they did not want an increase in the quantity of poetry. Their habits were getting more superficial in literature, because they were constantly seeking to add to the stores of imagination whilst they had not time enough to add to the stores of fact. Thus they were too much neglecting the gifts which had been bequeathed to them by their ancestors, and they would be wiser to turn their attention in some degree away from modern imagination, and preserve more perfectly that which was produced when the nations of Europe were young. Science had brought forward the disposition to test facts more accurately, which was adverse, more or less, to imagination, but which should direct to the grasping of the facts around them; and it was this special direction of painting which, he believed, ought to be cultivated. They too often wasted intellect now, by trying to make it imaginative. They might waste the life of a man by leading him to imitate the powers of another; but they could not lead one inventive mind to greater powers than it had originally, or to grasp a greater range than that which God had appointed for it; but what they could do was to prevent persons from wasting their energies, and attempting that of which they were incapable. If they imparted knowledge and industry enough, the imagination would come out. Without knowledge and industry none of those feelings would be nobly or justly expressed. The works of Thomas Seddon had to his (Mr. Ruskin's) mind arisen at a period of momentous importance to the whole of Europe. In proportion, it would seem, as nations advanced in mercantile importance, as commerce advanced, so the influential persons of all countries seemed bent upon destroying whatever stood in the way of modern improvement, and the work of destruction was going on fatally throughout France and Italy. In England it had been accomplished already, but it was taking place, in proportion to the prosperity of a country, over all Europe. Therefore it was that he was anxious that pictures in modern days should be addressed to the representation simply of facts, to the representation either of architecture or scenery of which the associations were likely to be swept away by what was called modern progress or improvement. This was the cause which the committee had it in their minds to bring before the Society of Arts on the present occasion. This cause had been advanced by many men, before the sacrifice of Seddon's life. But there was this, at least, of singular and pathetic in what Mr. Seddon had done—that he had turned away, of his own free will, from the paths of imagination to those of historical and matter-of-fact representation. They would see, on one side of the room, the noble picture "Penelope;" that was the first which Mr. Seddon painted; it was noble in every possible way; it showed inventive genius of the highest order—yet Mr. Seddon, deliberately measuring his own strength, and measuring the importance of the two tasks which lay at his choice, sternly turned from the temptations of fancy, and set out on a journey of danger and long self-denial, in order faithfully to record the scenery of the Holy Land. Not only was Seddon peculiar in the direction which he gave to his pre-Raphaelite endeavours, but it was to be added that Seddon took a peculiar interest in the welfare of the workmen of England. Mr. Ruskin proceeded to narrate the establishment by Seddon, with the co-operation of Nevill Warren, of the first school of design in London, called the North London School of Design for workmen, in Camden-town, the principal superintendence of which devolved upon Seddon himself, conjointly with the satisfaction of the other arduous claims upon his time, attention, and hard labour. His great exertions during that period of his life, it was believed impaired his constitution, and were regarded as the primal cause of the failure of his health

in Syria, and his dying there. Mr. Ruskin then entered into a recital of the labours of Seddon in his last great work of "Jerusalem," and concluded by appealing to the Society and those present to aid in doing justice to one of our greatest artists by the recognition of his genius. It was the object of the Committee to purchase for the nation, from Mr. Seddon's widow, his picture of "Jerusalem, with the Mount of Olives," and to present it, in memory of Mr. Seddon, to the National Gallery. The picture was valued at the price of four hundred guineas. A subscription for that purpose had been opened, in which all persons were invited to join who either felt respect for Mr. Seddon's genius, or desire to promote the objects to which he had sacrificed his life. What sum might remain, after the picture (poorly valued, Mr. Ruskin thought, at such a price) had been purchased, it was intended by the committee to ask Mrs. Seddon to accept; and Mr. Ruskin hoped that the Society of Arts, which had honoured him with their permission to bring these circumstances before them, would set the seal of their approval to the merit of the painter, and thus grant the only comfort which was now possible to his widow, whose sorrow must be deeper and more poignant in proportion to the greatness of the hopes she had cherished, as she watched the unfolding genius of her husband. It was for the Society now to decide, whether they would further this noble cause of Truth in art, while they gave honour to a good and great man, and consolation to those who loved him, or whether they would add one more to the victories of oblivion, and suffer this picture, wrought in the stormy desert of Aceldama, which was the last of his labours, to be also the type of their reward; whether they would suffer the thorn and the thistle to choke the seed that he had sown, and the sand of the desert to sweep over his forgotten grave.

Colonel SYKES, M.P., F.R.S., moved a vote of thanks to Mr. Ruskin for his address, and announced that the collection of Mr. Seddon's works would remain open for inspection to the end of May.

The thanks of the Society are especially due to those gentlemen who, by lending the works of art and other objects of interest above mentioned, contributed so largely to the enjoyment of the members.

A FEW REMARKS ON THE ECONOMIC USES OF THE MARINE ALGÆ.

By P. L. SIMMONDS.

The premiums for essays offered by Sir W. C. Trevelyan, on the application of the Marine Algæ and their products as food or medicine for man and domestic animals, will, I trust, be the means of eliciting much valuable economic information in a comparatively neglected field of inquiry. The subject is one that had not been lost sight of by the Council of the Society of Arts, for in the premium list for the present year, information, I perceive, is invited as to the mode in which size from sea-weed is prepared and used by the Chinese.

Sea-weed occupies, perhaps, the largest geographical range of any known vegetable production, being found in more or less abundance wherever there is sea to nourish it. And yet, economically, it has been applied to few purposes esculent, medical, or manufacturing, and, in a chemical point of view, the fuci have been considered almost beneath investigation. Far, however, from being what Dr. Johnson terms them, "noxious and useless plants," they subserve many important purposes in the economy of nature, and might be much more generally utilized.

The natural history view of the algæ family has been investigated by several popular scientific inquirers, but no one has thought it worth while to go into any

lengthened investigation of their uses to man and the domestic animals, or to consider how they might be more generally applied to economic purposes. A very valuable paper appeared recently, however, in the *Edinburgh Philosophical Journal*, by a well-known author and scientific investigator, Dr. John Davy, F.R.S., which contains some analyses and remarks well worthy the consideration of those intending to compete for the prizes offered. The experiments and researches are, however, confined to four species of sea-weed common to our coasts, but they may, as Dr. Davy hopes, induce others to engage in and extend the inquiry concerning a class of substances which certainly have not yet received the degree of attention they deserve, especially from the analytical chemist.

A brief digest of their present uses, and the state of our knowledge in respect to sea-weeds, from the most reliable information, scattered over a variety of sources, may not be unacceptable in guiding the inquiries of those who have not given much attention to this interesting branch of study. In its various phases, esculent, medicinal, manufacturing, and agricultural, it requires closer investigation. The abundance of vegetation with which the All-wise Creator has stored the deep has certainly not been provided in vain, and was doubtless intended to contribute to the service of man as well as of the lower animals, and for the general economy of nature. From the limited space available in the *Journal*, I can glance but briefly at some of the varieties of sea-weed, leaving the fuller details to be filled up by those who have more leisure and facility for prosecuting the inquiry.

DULSE.—The *Rhodomena palmata* of Greville, passes under a variety of names, dulse, dylisk, or dellish, and among the Highlanders as dullisg or water-leaf. It is nutritious but sudorific, and has a smell resembling violets. It is employed as food by the poor of many northern nations. When well washed this alga is almost tasteless; chewed—the manner in which it is commonly eaten by the peasantry of Ireland, without being dressed—it has a mucilaginous feel in the mouth, with a slight acid aftertaste.

The Icelanders wash it thoroughly in fresh water and dry it in the air, when it becomes covered with a white powdery substance, which is sweet and palatable; it is then packed in close casks and preserved for eating. It is used in this state with fish and butter, or else by the higher classes, boiled in milk, with the addition of rye flour. In Kamschatka, a fermented liquor is produced from it.

It is consumed in considerable quantities throughout the maritime countries of the north of Europe and in the Grecian Archipelago. Cattle are very fond of this seaweed, and sheep and deer eat it with so much avidity, that they are occasionally drowned by going too far from land in quest of it at low-water. The fronds of another seaweed, the *Fucus vesiculosus* of Linnaeus, forms a considerable part of the winter food of cattle and sheep in the Western Hebrides. It is known as seaweare, and seawrack, and as black or swine tang. It makes good manure, and furnishes kelp. In Gothland the bladder fucus is generally given to pigs; other common species constitute a part of the fodder upon which the cattle are supported in Norway.

In Iceland the *Fucus vesiculosus* passes under the name of Doughlaghman, and of four kinds of seaweed used for food on the coast of Donegal, this species seems to be held in the greatest estimation.

To go farther from home, we find the large sea-tangle, *Laminaria potatorum*, furnishing the natives of Australia with a proportion of their instruments, vessels, and food, while other species of the same family constitute an equally important resource to the poor on the west coast of South America, and to the Fuegians, and inhabitants about the Straits of Magellan.

At a recent meeting of the Royal Society of Van Dieman's Land, samples of algæ, cast upon Sloper island, were presented and examined, which are known to yield

a pure and delicious jelly, to which purpose it has been for years applied.

Growing most common, and in the greatest abundance, on every part of the earth bound by rock and washed by salt water, is a seaweed, known by the name of "Bull Kelp;" it varies in length and substance, according to its local position; it has a thick stem, and flat oval-shaped leaf, and is about the thickness of sole-leather. The aborigines of Van Dieman's Land, New South Wales, and New Zealand, and probably those of every sea-girt shore, highly prize this weed as an article of food; they estimate it, indeed, as most nutritious and palatable. Mr. Howie was first made acquainted with the nourishing properties of the "Bull Kelp" many years ago, when engaged with several aborigines on King's Island, burying the drowned people by the ill-fated ship *Catarigue*, and when falling short of provisions he feared the necessity of having to return to Melbourne for a supply. The aborigines requested him to keep the provisions left for the use of himself and the white people with him; they told him they had plenty of good food—showed him the bull kelp, and explained their mode of dressing it. Mr. Howie partook of it, and has, since then, frequently for days together, lived entirely upon it. He described it as exceedingly nutritive, and even fattening.

The mode of dressing bull kelp is very simple; it is picked from the rocks, and dried in the sun; after which it is roasted. The aborigines place it on the wood embers of a fire, and keep turning it, until all parts are equally cooked; it is then soaked in fresh water for ten or twelve hours, and is fit to eat, or, being hung up and dried, may be preserved for many months. The natives carry it about with them on their journeys, and require no other description of food; they use it as we do bread, eating it by itself, or with animal food.

It is not possible to mistake any other description of seaweed for bull kelp. None other grows like it. Possessed of this knowledge, and the mode of converting it into wholesome and even nourishing food, in the event of being cast away upon any uninhabited island, in the absence of shell fish, the flesh of animals, or vegetable productions, man cannot starve; here is food attainable at all times and in all positions—presuming that he can obtain fire under all circumstances. The information cannot be too generally circulated.

TANGLE.—The leathery flat fronds of *Laminaria digitata* (Lamouroux), when young, are employed as food for both man and cattle. It is known under the several names of tangle in Scotland, red-ware in the Orkneys, sea girdles in England, and seawand in the Highlands.

The tender fronds of the young stems are eaten by the Scotch, and they are boiled and given to cattle in Nordland. The dried stalks serve in the Orkneys and Bretagne for fuel. The stems are made into knife-handles.

Laver, sloke, or slokaun (*Porphyra laciniata*, Agardh) is employed as food, salted, eaten with pepper, vinegar, and oil; another species, *P. vulgaris*, has also similar nutritious properties. This alga is much used for culinary purposes in England, under the name of Laver, in Ireland as sloke, and in Scotland as slaak. It makes a most wholesome and very palatable dish, the thin purple and green fronds being stewed. They are gathered during the winter months only, being too tough in the summer. After being properly cleaned, the seaweed is stewed with a little butter, to prevent its getting a burnt flavour, and is brought to Belfast, where, according to Mr. Drummond, it is sold by measure, usually at the rate of 5d. per quart. Before being brought to table, it is again heated with an additional quantity of butter, and it is generally eaten with vinegar and pepper. The pepper dulse (*Laurencia pinnatifida* of Lamouroux) distinguished for its pungent taste, is often used as a condiment, when other seaweeds are eaten. There was a time when the cry of "buy dulse and tangle," was as common in the streets of Edinburgh and Glasgow, as is that of "water-cresses" now in our metropolis.

Another sea-weed, growing on rocks in the sea, in deep water, passes under the various local names of badderlocks and hen-ware in Scotland, honey-ware in Orkney, and murlins, &c., in other localities. It is the *Alaria esculenta* of Greville. The stout mid-rib is eaten, when the olive green frond is stripped off. It forms a part of the simple food of the poorer classes on the Irish and Scottish coasts, in Denmark, Iceland, and the Faroe Islands. This fucus is of most rapid growth, and will spring up to six feet in length in the course of six months.

Mr. Johns (Bot. Ramb., 279) does not speak very highly of this alga as an esculent. "Being curious," he says, "to discover what kind of fern the rocks round the coast near the Giant's Causeway afforded, I stopped one of the men who was going home with his bundle, and asked him to give me a taste, prepared in the way in which it was generally eaten. He accordingly stripped off all the expanded part of a long and narrow leaf, and presented me with the stem or midrib. It was, I must confess, as good as I expected, but at best a very sorry substitute for a raw carrot, combining with the hardness of the latter the fishy and coppery flavour of an oyster. I made a very slight repast, as you may suppose, and after having given the man a few pence for his civility, continued my walk. My guide, however, seemed to think, that if I did not choose to enjoy to the full the advantage which I had purchased, there was no reason why he should not. He accordingly stayed behind for a minute or two, and when he rejoined us was loaded with a supply of the same plant, which he continued to munch with much apparent relish as we pursued our walk."

Mr. Drummond (Mag. Zool. and Bot. II., p. 148) gives a somewhat different account, both of the part which is eaten and its flavour—his observations referring to the coast of Antrim. "It is often," he says, "gathered for eating, but the part used is the leaflets, and not the midrib, as is commonly stated. These have a very pleasant taste and flavour, but soon cover the mouth with a tenacious greenish crust, which causes a sensation somewhat like that of the fat of a heart or kidney."

The long string-like sea-lace, or, as the Orkney people call it, sea-catgut, (*Chorda filum*), is collected as food for cattle in Norway, and when twisted and dried, it possesses a strength and toughness that adapts it for fishing lines.

The broad green membranous fronds of *Ulva latissima*, (Linnaeus), which have a bitterish salt mucilaginous taste, are employed as food, stewed, and seasoned with lemon juice. It bears the name of green laver, or sloke, and oyster-green.

Another nutritious alga is the dulse of the southwest of England, *Iridaea edulis* of Bory, which, according to Stackhouse, is employed as food by fishermen, either raw or pinched between hot irons; its taste is then said to resemble roasted oysters. The fronds are flat, succulent, and of a dull purple.

Under the several names of Carrigeen moss, Irish moss, pearl moss,—the fronds of *Chondrus crispus*, (Lyngb), when bleached, enter now to some extent into commerce. Containing a large quantity of gelatine, it has been successfully applied, instead of isinglass, in the making of blanc-mange and gellies. The blanc-mange thus made is hardly distinguishable from that prepared with the more costly article, and is in common use in Ireland at the tables of the opulent. This alga contains 77 or 78 per cent. of mucilaginous and gelatinous ingredients, and its gelatine even exceeds isinglass in its power of coagulating milk on cooling after boiling. According to the analysis of Dr. Davy, it appears to be composed principally of three substances; one analogous to gum, soluble in cold water, and having most of the properties of mucilage as represented by gum-arabic; one analogous to gelatine as existing in isinglass soluble in boiling water; and the third neither soluble in cold nor boiling

water, the nature of which remains to be ascertained. These constituents appear to exist in the following proportions:—

- 28.5 Gummy matter.
- 49.0 Gelatinous matter.
- 22.5 Insoluble matter.

100.0

Carrigeen moss is coming into use for the purpose of feeding stock, and has been employed for stiffening silks, &c. A fucus, probably allied to this, found at the Cape of Good Hope, is boiled into a jelly, and, being mixed with sugar and the juice of oranges or lemons, makes a very agreeable dish.

The *Laminaria saccharina* is interesting from the fact of its containing sugar. It is highly esteemed in Japan, where it is extensively used as an article of diet; being first washed in cold rain-water, and then boiled in milk or broth. Dr. Stenhouse obtained from it mannite, from which he manufactured an article as purely white and almost as sweet as loaf sugar.

Another fucus, the *Durvillia edulis* of Bory, is sold commonly as a table esculent in the markets of Chile.

Seaweed supplies a favourite article of food to millions of people of all classes in the Japan and the Kurile islands. The kambou of the Japanese, and the sea-cabbage of the Russians, is the *Fucus saccharinus* which is found in great abundance on the islands and shores of Eastern Asia. It is spread out upon the sand to dry, then collected together in heaps resembling haycocks, and covered with matting, until the time arrives for loading the vessels which carry it from the Kurile islands to the ports of the southern islands of Japan. It is used in soup, or, wrapped round when fish, both are boiled and eaten together. Often it is broiled on the fire; salt is strewed on it, and it is eaten without any further dressing. On some parts of the coasts of Nippon it is gathered, dried, and roasted over the coals, rubbed down to a very fine powder, and eaten with boiled rice or in soup.

EXPERIMENTS MADE BY DR. APJOHN, IN CONJUNCTION WITH DR. DAVY, IN JULY, 1854.

Specimens supplied by Dr. Davy, and dried at 212.°	Chondrus crispus, bleached	Fucus vesiculosus.	Rhodomenia palmata (Dylisk).	Nitrogen Per Cent.
				2.152
				2.379
				3.776

EXPERIMENTS MADE BY DR. APJOHN, IN AUG. 1854.

	Water.	Dry Matter.	Per cent. of Nitrogen in Dry Matter.	Protein contained in Dry Matter.
<i>Chondrus crispus</i> , bleached, from Bewly and Evans	17.92	82.08	1.534	9.587
<i>Chondrus crispus</i> , unbleached, Ballycastle	21.47	78.53	2.142	13.387
<i>Gigartina mammosa</i> , Ballycastle	21.55	78.45	2.198	13.737
<i>Chondrus crispus</i> , bleached, Bewly and Evans, 2nd expt.	19.79	80.21	1.485	9.281
<i>Chondrus crispus</i> , unbleached, Ballycastle, 2nd expt.	19.96	80.04	2.510	15.687
<i>Laminaria digitata</i> , or Dulse Tangle, Ballycastle	21.38	78.62	1.588	9.925
<i>Laminaria digitata</i> , or Black Tangle, Ballycastle	31.05	68.95	1.396	8.725
<i>Rhodomenia palmata</i> , or Dylisk, Ballycastle	16.56	83.44	3.465	21.656
<i>Porphyra laciniata</i> , or Levre, Ballycastle	17.41	82.59	4.650	29.062
<i>Irisia edulis</i> , Ballycastle	19.61	80.39	3.088	19.300
<i>Ataria esculenta</i> , or Murlins, Ballycastle	17.91	82.09	2.424	15.150
Means	20.42	79.58	2.407	15.045

N.B.—The amount of water given in this table is considerably less than what belongs to the algae when fresh from the sea, for they had all undergone a partial drying preparatory to being sent up from Ballycastle to Dublin for analysis.

That these seaweeds are deserving of the reputation which they have amongst the poor, to whom their use as articles of food, with one or two exceptions, is chiefly restricted, and most of all in Ireland, is in a manner demonstrated by the results of the experiments of the able chemist I have just quoted, and on whose accuracy the most perfect reliance may be placed. Dr. Apjohn, in an interesting lecture which he delivered at a meeting of the Royal Agricultural Society of Ireland, and since published in that Society's Journal, has given some account of these experiments.

PER-CENTAGE OF NITROGEN IN VARIOUS EDIBLE SUBSTANCES DRIED AT 212.°

Potatoes	.541
Flour of first quality	1.817
Beet roots (mean of 13 experiments)	1.848
Mangolds (mean of 3 experiments)	1.781
Swedish turnips (mean of 5 experiments)	1.843
Means	1.567

These results are so unexpected, that could there be any doubt (which I have not) of their accuracy, it might be questioned. The mean of them shows that the proportion of nitrogen these alga contain, exceeds that not only of the ordinary articles of vegetable food, but even that of wheaten flour of the first quality, being as 2,407 to 1,317.

CORSICAN MOSS.—Properly this consists of a species of *Plocaria*, *P. Helminthochortos* of Nees. It is the *Gracilaria Spærococcus*, or *Gigartina Helminthochortos* of others. As sold in the shops this so-called moss consists of various marine productions, especially of *Laurencia obtusa*, with a very little *Plocaria* intermixed. It is obtained on the coast of Corsica, and elsewhere in the Mediterranean, and is nutritious, strong scented, and was formerly held in repute as a vermifuge.

Plocaria tenax, the *Spærococcus*, or *Gracilaria tenax* of other authors, found in the Eastern seas, has a gelatinous frond, and, from its glutinous, nutritious properties, is used for soups and jellies among the Chinese, and also as size and gum. It is imported in large quantities into Canton, from the coasts of Fo-kein and Tchekiang, and is believed to be the chief ingredient of the Chin-chin glue.

The CEYLON MOSS, *Gigartina lichenoides*, is a small and delicate fucus, of white colour and flattened filiform shape, and contains about 70 per cent. of starch and vegetable jelly. Prepared with milk and sugar, and flavoured by lemon juice or sherry, it would afford the invalid a pleasant article of diet at sea, where other jellies or their materials cannot be so easily preserved.

AGAR-AGAR.—This is the Malay name for an alga, which has long been an article of commerce in the Eastern seas, and is extensively imported into China. When boiled with sugar it forms a sweet jelly, much resembling that made from calves' feet, and is highly esteemed, both by Europeans and natives, for the delicacy of its flavour. Its cheapness and admirable qualities render it worthy of greater attention as an article of trade.

The bamboo-lattice work for lanterns in China is covered with paper, which, when saturated with this gum, is semi-transparent. It is also used in the manufacture of silk and paper, and is preferable to flour for making paste, as insects avoid it.

Agar-Agar is prepared at Malacca, in the shape of a clear jelly, which is much admired. The plant is found on the rocks at Pulo Ticoos, and on the shores of the neighbouring islands. It is blanched in the sun for two days, or until it is quite white. It is obtained on the submerged banks in the neighbourhood of Macassar Celebes, by the Bajow-laut, or sea-gipsies, who send it to China. It is also collected on the reefs and rocky submerged ledges in the neighbourhood of Singapore, and constitutes the bulk of the cargoes of the Chinese junks on

their return-voyages. There are two or three qualities, ranging in price from 12s. 6d. to 30s. per $\frac{1}{4}$ cwt.

The Ceylon moss, *Gracellaria (Gigartina) lichenoides*, a small and delicate fucus, is also of a gelatinous nature, and after being washed in fresh water, and pressed to remove the salt and some mucilage, it is employed as a preserve.

Some of these seaweeds are probably used by the Salangana, or esculent swallows, in constructing their nests, which are esteemed so great a food delicacy by the Chinese.

A seaweed not described, but passing locally under the name of Akar jong barellah, is eaten by the Malays, the fronds being dressed with curry.

Occasionally species of *Nostoc* are eaten in the East. In a communication made a year or two ago to the Bombay Branch of the Asiatic Society, specimens of *Nostoc collinum* were sent by Mr. Frere from Shikarpoor, which were found pretty thickly strewn over a space of two or three square miles, after a shower of rain, in the month of May, 1855. The natives described it as a shower of gosht (meat), which they say it resembled, being, when fresh, of a soft pulpy consistence, and like flesh in colour.

It was an alga, not far removed in the vegetable kingdom from the seaweeds which are frequently boiled down into a jelly for food; and in China, as well as in some other countries, certain species of *Nostoc* are commonly eaten. The Scindians were, therefore, not far wrong in calling it gosht, or meat; and from the inconceivable smallness of the germs from which it is first generated, like the green which makes its appearance over objects that have never been exposed to the monsoon, yet present this colour a few days after it has commenced, the germs of this *Nostoc* might have been brought through the air to the place where they at the appointed time for their germination passed into visible forms, which having no earthly origin that the ignorant Scindians could conceive, and coming into tangible masses just after a storm, not unnaturally led to the conclusion, that they must have been showered down from the heavens. Happily, many of these events which appear miraculous to the ignorant, and give rise to scepticism among many at the present day, because they are not understood, derive explanations from science which defy all attempt at disbelief. It is wonderful to the Scindian to see what he can only conceive to be a substance rained from heaven; it is no less wonderful to the naturalist, who can trace this substance to its germs, to wonder even still more how the first germs were generated which uninterruptedly and unerringly goes on producing its like. Thus does the Creator keep up his power of eliciting wonder and admiration from the most ignorant to the most learned.

Everywhere, where sea-weeds are easily obtained, they are in repute as manure. Their fertilizing powers are quite in accordance with their composition, the large proportion of azote and the considerable portion of the inorganic substances which they contain, and which are equally the elements of our cultivated crops, especially phosphate and carbonate of lime, and one or both of the fixed alkalis.

The Duke of Hamilton assigns to each of his tenants in the Isle of Arran, a portion of the sea-shore to collect seaweed. In Ireland this is the chief fertilizer for thousands of acres of potatoe land.

The great demand for this manure, the high prices it brought, and the great breadth of ground devoted to potato-planting last season, may be inferred from the fact, that it is computed by those who have had the best opportunities of forming an accurate estimate, that the large sum of £10,000 has been paid for seaweed at the Galway docks alone. If we take into account the quantities which have been disposed of at Oranmore, Kinvarra, Ballyvaughan, Barnas and the other creeks and lan'ing-places within the bay, the cutting of seaweed

this season must have realised upwards of £13,000. It has been conveyed to a considerable distance, by boats along the lakes, by carts on the road, and even by railway. Perhaps in no former year has the use of it been more general, or the price paid for it so high, as in the present season.

In the Channel Islands the season for cutting seaweed is fixed by law, and it is not only used for manure, but serves also to some extent as a fuel, and makes a hot if not a cheerful fire. There is no reason why decomposed and concentrated seaweed might not be made a valuable fertilizer. Almost all the seaweeds yield soda and iodine on incineration. Until very recently they have been collected in large quantities and burned for the sake of the soda yielded by the ashes; after separating the alkali, iodine was obtained from the mother liquors. Although the trade in kelp has been nearly annihilated by the plan of making soda from common salt, still seaweed ashes constitute the sole source from which iodine is manufactured.

To sum up, in the words of Dr. Davy, are not these esculent sea-weeds, on account of the iodine and bromine which they more or less contain, deserving of more general use? Nowhere, I believe, where they are in common use is bronchocoele known; and, as far as I have been able to ascertain, scrofulous complaints are rare and even pulmonary consumption; whilst on the contrary, in inland districts, even in our own country, bronchocoele and scrofula are more or less prevalent, especially amongst the labouring class, who rarely have the benefit of articles of food known to contain iodine. And this remark applies to our troops, whose dietary hitherto has been regulated with such a marked neglect of medical science.

In relation to use, these vegetables have for the most part the recommendation of cheapness, so as to be within the reach of the poorest; and their not being liable to spoil by keeping when dried, is also a circumstance in their favour; and another, I may add, is that they are grateful to the palate, and some of them—dulce, for instance—even in their undressed state.

S, Winchester-street, Pimlico.

EXAMINATIONS.

The following letters have been addressed to Dr. Jeune, the Master of Pembroke College, Oxford, by the Rev. F. Temple, one of the inspectors of schools, and late head of Kneller Hall training school:

“ TO THE MASTER, PEMBROKE COLLEGE, OXFORD.

“ S, Royal-crescent, Notting-hill, London,
April 17, 1857.

“ My dear Master,—I promised to put on paper the substance of the conversation which I had with you in Oxford a little time ago on the subject of middle-class education.

“ The education of the middle classes suffers at present from the want of any definite aim to guide the work of the schoolmasters, and from the want of any trustworthy test to distinguish between good and bad schools.

“ That the result is unsatisfactory, all who know anything of the matter agree in proclaiming. It is constantly said, and said with truth, that many national schools now give a better education than can be obtained at schools of much higher pretensions. The masters in the national schools know precisely what they are expected to do, and know that the government inspection will also invariably in the end bring into clear light whether or not they have done it. The masters who now teach the middle classes have no means of knowing either the one or the other. They are, speaking generally, expected to prepare boys for what is called business. Now this is so vague an aim that they may well be forgiven if they miss the proper means to reach it; but even if they so thoroughly understand their duties as to give precisely what is wanted, they have no means of

convincing the parents of their pupils that they are doing so. In not a few instances the parents are misled into preferring what makes a show to what is really useful; and I have known a case where a very efficient master was driven away by the competition of one in every way his inferior, simply because the latter taught a showy but quite useless kind of penmanship. In all cases the plausible puffer has a most unfair advantage over the thorough teacher—an advantage which would instantly disappear if the work of the two were brought to any real test.

“This neglected condition of the education of the middle class becomes more striking when contrasted with the great efforts made to improve the education both of those above and those below that class. The universities, which have been to a great extent occupied by the upper class, are actively engaged in improving their systems. The government has spent two millions and a half upon the lower class, and is still spending at the rate of half a million a year. But nothing whatever is done for those who lie between.

“And this neglected class has a very wide range, including many who are socially on a level with some of those who enter the universities, and a few of the more active-minded among those who are taught in our national schools. Here are to be found without doubt the great body of our voters, of our tax-payers, of our rate-payers. It is obviously wrong to leave them out of sight when speaking of the education of the country.

“The remedy is, I believe, in the hands of the universities. If Oxford and Cambridge were to undertake the task of guiding and testing the instruction given in the schools of which I am speaking, I am confident that their guidance would be gladly accepted, would speedily remedy the evils that I have described, would confer a great benefit on the country, and would re-act most beneficially on the universities themselves by increasing their popularity and the general sense of their value.

“I do not think any very complicated scheme is needful for this purpose. What I should propose would be this:—

“That the university should confer some such title as Associate in Arts on every person who passed an examination before examiners appointed either by the hebdomadal council or by a delegacy, as might be thought best.

“This examination should pretty nearly follow the precedent set by the Final Schools. An examination of a somewhat similar kind to what I am proposing is to be tried in Devonshire this summer, at the suggestion of Mr. Acland. He has planned his examination on the present Oxford Final Schools, and the way in which it has been welcomed by the classes for which it is intended proves that it suits their case. There is, moreover, an obvious advantage in the university's following a university precedent.

“I should propose, then, a scheme of examination somewhat of this kind:

“1. A preliminary examination in

“(a) Writing from dictation, arithmetic, parsing, and elementary geography.

“(b) Religious knowledge (if the parents of the candidates desire it).

“2. Four Schools—

“(a) School of English, to include English literature and composition, English history, the rudiments of political economy, and geography.

“(b) The School of Languages, to include French, German, and the elements of Latin.

“(c) The School of Mathematics, to include practical mathematics, architecture, and drawing.

“(d) The School of Physical Science, to include the elements of mechanics, chemistry, and physiology, and the sciences connected with them.

“Two standards should be fixed, one for boys of 15, the other for boys of 17. The title of Junior Associate

should be given to those who pass the former, that of Senior Associate to those who pass the latter.

“Every candidate should be required to pass the preliminary examination and one school.

“A class list for each school should distinguish those who did really well from those who merely passed.

“The expense of paying the examiners should be covered by requiring a fee of about 5s. for admission to the examination, and another of about 2s. 6d. for the testamur.

“The examinations should be held annually in Oxford. But if the gentry or local authorities of any place asked for an examination to be held in their neighbourhood, and would undertake to bear the expense of the necessary arrangements, an examiner should be sent down to them.

“The examination should, I think, be all on paper, and the same examination papers used everywhere at once.

“Now, such a scheme as this would not be at all difficult to work. It would give a definite aim and a powerful stimulus to all the education of the middle class, and it would probably bring within its operation many even of the higher class, who now enter professions where an academical degree is not wanted, but whose parents would be glad to have the school work of their boys authoritatively tested, if it could be done without the expense of a university education.

“The objection which occurred to your mind when I spoke on the subject, was a doubt whether candidates would present themselves. On that point I have no doubt; but I have been communicating on this point with several persons interested in education, and in a few days I will write again and tell you the result of my inquiries.—Yours, &c.,

“F. TEMPLE.”

“s, Royal Crescent, Notting-hill, London, W., April, 24.

“My dear Master,—I promised in my last letter that I should write again and state some of the grounds on which I believed that such a scheme of examination as I described would be generally welcomed by those who are concerned in the education of the middle class, and would not fail for want of candidates to be examined.

“I rely chiefly on the fact that plans of this sort have sprung up spontaneously in many different places, and have in every case proved successful; much more successful than could have been anticipated from such merely local attempts, backed by no commanding authority, and relying simply on the existence of a need strongly felt.

“Of these schemes of examination the best known is that commenced last year by the Society of Arts. In 1852 that Society, at the suggestion of Mr. Harry Chester, proposed to the various Mechanics' Institutes scattered over the country, that they should affiliate themselves to the society as a sort of centre of union. This was very generally agreed to, and between 300 and 400 of those bodies entered into the proposed union, and while, by this means, the institutes gained a centre, the society gained a means of acting very widely on the country at large. In 1854, at the suggestion of the same gentleman, the Society proposed to hold examinations for all members of these Institutes, and to grant certificates of competency in a great variety of subjects to all who passed the examinations. The first examination was held in London last June, with complete success. I was myself one of the examiners. Fifty-two candidates presented themselves, and the majority obtained certificates. This year a similar examination will be held in two places, London and Huddersfield. We do not yet know the number of candidates, but we do know that it will be very much larger than last year. Nor is the number that will come, any measure of the number that desire to come. For the Society was repeatedly pressed to hold examinations in other places, and only refused for

fear of breaking down by attempting more than its organisation, not originally adapted for such a scheme, would allow.

"This scheme, you will observe, though excellent in many ways, does not cover the ground which I am anxious that Oxford should occupy. The Society of Arts examines members of Mechanics' Institutes, and the examination is planned with a view to adults. An adult, if he is to study, would generally succeed best by keeping to a single subject; and accordingly the Society's examinations are broken up into a great number of separate divisions; a man may be examined separately in history, or in English literature, or in geography, or in chemistry, and so on. It is obvious that this is not the best way in which to test the work of schoolboys, and, indeed, the Society of Arts expressly excludes boys at school from examinations.

"Boys at school are, however, precisely those whom the University may most properly make the object of its care. The University may very properly do what the Society of Arts could not arrogate the right of doing, namely, offer to guide all the schools in their work, and to stamp that work with authoritative approval. And I have no doubt that the same reasons which brought so many candidates to the examinations of the Society of Arts will bring very many more to the examinations of the University of Oxford. None, I think, but University residents are unconscious of the high *prestige* which the University enjoys in the country at large, or how very eagerly any title would be sought which implied connection with Oxford or Cambridge. The first remark that has been made to me by numbers of persons to whom I have described the plan, has been, 'If the University will do what you propose, my boy shall go in for the examination.'

"The examinations held by the Society of Arts are the best known. But there are other schemes of the same kind in operation. One which has been planned by Mr. Acland, for examining boys destined for arts, manufactures, agriculture, or commerce, in the West of England, very nearly represents in its most important features what I wish to see taken up by the University, and extended to the whole country. It is intended for schools, not for Mechanics' Institutes, and it groups the subjects of study nearly as I have done, following, in fact, the precedent of the Oxford final examinations. The proposal was not made public before Christmas, and it offers few inducements, except a certificate of success, to bring candidates within its range. But it has been generally welcomed; more than thirty schools have already announced their assent to it, and nearly a hundred candidates have declared their intention of being examined,

"Mr. Acland's machinery is a local board of examiners, with the aid of two inspectors from the Committee of Council; but he intended his proposal to be followed up, either by the government or by some other authority. He would gladly see it replaced by the action of the university. And the thirty schools that have agreed to send boys to be examined by Mr. Acland's local board, would certainly be at least equally ready to send them before a board representing the authority either of Oxford or Cambridge.

"At the same time that Mr. Acland was applying to the Committee of Council for aid in working his project, another somewhat similar application was made by the Hon. and Rev. S. Best, on behalf of a board of education in Hampshire.

"This application was refused on some technical grounds; but the scheme has not been dropped, and in some shape or other will very speedily be brought into operation.

"Similar examinations for schools of a somewhat lower character have been organised under the name of prize schemes in the counties of Staffordshire, Cheshire, Shropshire, Warwickshire, and in South Wales. Others

are proposed in Lancashire, Yorkshire, and Northumberland. In all cases when the examinations have been held, a very large number of candidates have presented themselves. At the Staffordshire examinations last year there were 644 candidates examined.

"It is true that in all these schemes, including that of the Society of Arts, prizes have been offered for competition. But in the first place, the number of prizes has not borne any proportion to the number of candidates; and in the second place, the majority of the prizes have been generally offered, after the scheme has been set on foot, by persons external to it; and I have no doubt that similar prizes to be awarded by the university examiners would be offered by persons desirous to encourage education in their own locality, in the scheme that I propose should be adopted.

"I think it impossible to see this general and spontaneous movement, differing in detail, but everywhere similar in real character, without perceiving that the universities have here a great opportunity. The organisation of all this spontaneous action is what they, and they alone, can accomplish. And to do this would be to confer on the country a lasting benefit, only limited by the good sense and tact of those who might be appointed to administer the plan.

"But I have yet one further, and perhaps more forcible proof, that I am not asking Oxford to take a premature, and therefore, a false step. After my conference with you the other day, I communicated the outline of my proposal to persons interested in education in various parts of the country. The result will be, I have reason to believe, the presentation of petitions to the Hebdomadal Council from several large towns, and some schools and educational associations, praying for the adoption of a plan of the sort. In bringing some of these petitions before the council, I shall hope for your co-operation.—Yours, &c., "F. TEMPLE."

The following letter in reference to this subject, is extracted from the *Daily News* :—

TO THE EDITOR OF THE DAILY NEWS.

SIR,—Permit me to make a few short observations on the subject matter of Mr. Temple's letters to the *Master* of Pembroke College, Oxford, published in yesterday's impression of the *Daily News*.

While I entirely concur with Mr. Temple in his views as to the value of authoritative examination, considered either as a powerful stimulus to promote, or as an accurate test to ascertain the quality of education, I am compelled to differ from him as to the feasibility of the means by which he proposes to extend the benefits of a system of this kind to the country at large.

Mr. Temple's proposition is to this effect, that the universities, Oxford especially, should hold periodical examinations at Oxford and Cambridge; that they should send down examiners to localities prepared to receive them; that there should be preliminary examinations; that the examinations should be conducted simultaneously by printed papers; that certificates of different grades and prizes should be awarded. In short, his proposal comes to this, that the Universities should appropriate the scheme of examinations elaborated by the Society of Arts after several years of careful consideration, and apply it to ascertaining the progress made by school-boys, while being taught at commercial and other similar schools. Now, in the first place, I may be permitted to doubt whether the University of Oxford would be cheerfully accepted by the middle classes of this country as the guide and controller of the education of their children; and, in the next place, even if the scheme were practicable, I question its utility. I do not consider it a wise proceeding, or conducive to the acquisition of sound learning, that boys should be always getting ready for an examination. The operation of acquiring

sound and clearly-thought-out knowledge is a very different one from that of setting the knowledge so acquired in order, and getting it in hand for ready use at an examination. The two operations are to some extent incompatible. A gardener who should be always pulling up his carrots or his parsnips to see how they were growing, would have but a very poor crop when the time came to gather them up. I should be sorry to see a most valuable principle, when considered either as a stimulus or a test, used to accomplish ends for which it is wholly unfitted. The Council of the Society of Arts, in my opinion, follow a much wiser course, to test final results, not to meddle with intermediate processes. While a boy continues at school they leave his examinations to the school authorities; when he is leaving school and entering on the practical duties of life, the Society of Arts' Board of Examiners is prepared to certify to what purpose he passed his time at school. The rule laid down is to the following effect:—That no pupil of any Middle Class School in union with the Society of Arts shall be eligible for examination until his school education shall have been completed. Besides the College of Preceptors, a chartered body, is now, and for some years past has been, successfully engaged in conducting examinations of the class to which Mr. Temple refers.

Again, Mr. Temple objects that the Society of Arts has covered but a small portion of the ground which remains to be occupied. Now, nothing would have been easier for the Council of the Society of Arts than to have put forward a vast symmetrical plan of examination for the whole country, duly cut up into educational districts, and to have elaborated the details of this grand system—all on paper. But what would have been the result? Why, that the whole machinery would have fallen to pieces when it came to be set actually in motion. The Council of the Society of Arts followed a very different course. Four years ago they appointed a committee to inquire into this whole question of education. Having issued queries, and received from 700 to 800 replies, some of them important and valuable documents, this committee presented its report on industrial instruction (April 26, 1853). The importance of establishing a general system of examination is more than once pressed on the notice of the Council. The following extract may suffice:

"We have received," say the Committee, "a very large amount of decisive testimony in favour of some system of examination for provincial schools in connection with a central body which should be empowered to grant certificates of proficiency. On this subject the evidence is unanimous and decisive. Several of our correspondents, whose opinions are entitled to the gravest consideration, attach the utmost importance to a practical testing of results by means of examination. Some would go so far as to say that without some conservative provision of this kind no organisation, however perfect it may be at first, can long be secured from inefficiency and decay. Amongst others, we would direct attention to the important testimony of Baron Liebig, given at page 46 of this report."

Not satisfied with this, the Council of the Society of Arts proceeded to ascertain the sentiments of the great manufacturers, public companies, and other employers of labour, whether intellectual or physical, throughout the country. To a declaration of confidence in the Society's projected movement they obtained upwards of 500 signatures. Fortified with this document, and with the unanimous approval of the Mechanics' Institutions throughout the country, they held their first examination last year in the Adelphi. There were 52 candidates. This year it is proposed to hold them in London and at Huddersfield. Already there are nearly 300 candidates. Next year it is proposed to have some ten or twelve centres of examination. Thus the Council of the Society of Arts have proceeded tentatively and cautiously, step by step, led by the hand as it were by public opinion,

corrected in their views by experience as they proceeded, and upheld by the approbation of the public in the course they have entered on. Without any solicitation whatever on their part, the prize list now exceeds £500.

Again, it is objected to the Society of Arts' scheme that a considerable latitude of choice is allowed; that a "man may be examined separately in history, or in English literature, or in geography, or in chemistry, and so on." Now, this freedom of choice, which is charged as a defect, appears to me one of the great advantages of the Society's scheme of examinations. It leaves men to follow the bent of their several inclinations, and to study those subjects for which they have a natural aptitude. It refuses to recognise the practice of laying down one or two mental grooves in which every man's mind should be compelled to run.

I may also be permitted to doubt whether the University of Oxford, selecting from its own members only, could appoint a Board of Examiners which would in an equal degree command the confidence of the public with that which has given its services to the Society of Arts. It must not be forgotten that the Board of Examiners is the body directly responsible for the purity, soundness, and efficiency of the examinations. The Society of Arts and its Council act only ministerially in the matter. Now the Board of the Society is constituted of forty-five persons. Ten are members of the University of Oxford, nine of Cambridge, two of Dublin, six of Edinburgh, nineteen are fellows of the Royal Society, and thirty-two are either Professors in the Universities and great Public Colleges, or are practically and officially connected with education. I believe—indeed it cannot be doubted, that such a body of men, all of them eminent with but very few exceptions, constitute a Board whose deliberations will be of more value—the questions which arise being viewed from different aspects—than those of any Council or Committee selected exclusively from any one University.

It is worthy of grave consideration whether the independent and possibly the conflicting action of numerous local Boards constituted for the purpose of conducting examinations, might not tend to cast discredit on the entire scheme. Were Provincial Boards to "tout" for candidates, with promises, not expressed but understood, of easy examinations; numerous prizes, and a large issue of certificates, that contempt which now in most cases deservedly attaches to the "testimonials" of private persons would deepen into reprobation when the practice became an organised sham and a legalised hypocrisy.

I am, &c.,
JAMES BOOTH,
Chairman of the Board of Examiners of the
Society of Arts.

The Vicarage, Wansworth, May 2.

Home Correspondence.

THE THAMES EMBANKMENT.

SIR,—Agreeing with Mr. Bennoch as to the general desirability of the improvements he advocates, there are yet some essential particulars which he forgets, chiefly the question of air space. He gives us an arbitrary width of sixty feet for the gauge of streets, but omits the height of the buildings. In the present day the tendency is constantly to increase them in height, without regard to the width of the streets, and the result is that in the narrow streets of the City human beings are doomed to dwell the whole day through by the light of unhealthy gas. This is an evil which ought to be prohibited by the legislature as much as foul drains. Mr. Bennoch advocates the opening and widening of streets for the purposes of traffic, but he proposes also to diminish the air spaces—what are technically called "the lungs of London." Our parks are lungs which of late we have sought to enlarge, and our squares are

lungs on a small scale. But the river is the largest lung of all, by reason of its width, mud banks and shores inclusive, which have kept the buildings from encroaching on it.

Mr. Bennoch proposes to narrow the river and keep its channel always under water without bare banks, by elevated embankments or quay walls. Along the edges next the river he proposes to form a railway, a roadway, and a footway. The Temple gardens are to be left as they are, in all the greenery that the London atmosphere will permit. In front of Somerset House a new garden is to be created for the benefit of the scholars at King's College; and from Scotland-yard to Westminster-bridge the abutting gardens are to be widened. But from Waterloo-bridge to Northumberland-wharf, blocks of lofty houses are to arise, narrowing the air-space of the river by one-third, and depriving London of that much of its largest lung, and of what might be converted into one of its most beautiful promenades at a small expense.

If the Londoners permit this, they will be the greatest dolts that ever permitted themselves to be gulled out of their choicest possession under a pretext. Why, of all things in the way of improvement, what we most want is to drive broad ways through the dense blocks of buildings, clearing them bodily out. Even that small patch near St. Paul's, enclosed in an unsightly wooden fence, is the subject of struggle to keep it unbuilt on. Every week we have some newspaper article dilating on the iniquity of building on Hampstead-heath, and here, at a bowshot from the Strand, lining the course of the river, we have the site of a boulevard finer than Paris can boast of, a power of prolonging Temple-gardens to Westminster at a small expense, and we listen in patience to a proposal to cover a great part of it with buildings already too dense. Rivers between quay walls are not beautiful; witness the Liffey at Dublin; and we do not want our Thames to be likened to a Dutch or Venetian canal. We do not want a lofty embankment; the Temple-gardens show us what we do want, and it will be utter madness to convert into private building property a site which nature has preserved for us for public uses through all past time. If our time were to come over again, if the banks of the river had been unbuilt on, we should take care to preserve roads and gardens along its borders through the whole length; and it is more worth an agitation than is the preservation of Hampstead-heath, to preserve what remains. We can get by rail to many localities; but no facility of rail along the river can compensate for the loss of air-space and the beautiful walk it is in our power to create. There is as much pretext for building on the site of Tower-hill or Trafalgar-square as on the river banks. The press some time back raised an outcry at the talk of the Temple benches "doing as they liked with their own," erecting a building on the site of the Fountain-court. It would be a far larger grievance for a company of individuals to possess themselves of the river banks to erect buildings there. We want our river, with its broad expanse, improved by art as much as may be; but not converted into a canal between lofty piles of buildings. The covering up of mud banks on rivers and sea shores with buildings has been pregnant with evil in many parts of the world. Planting them with trees—not jungle—absorbs the mephitic gases and renders them wholesome. I trust that until it shall have been demonstrated to be a desirable thing to cover all our squares and other open spaces with buildings, the press of London will raise its voice unanimously against any such barbarian invasion of the river or our future Thames-park, on either bank.

Mr. Bennoch objects to Mr. Rammell's plan of a "lamp-post railway." The disadvantages of laying rails on single columns are obvious; but duplicate the columns, and stretch the beams from side to side of the street, and much of the difficulty will vanish. We might thus obtain a practical roadway in the first place without impeding ventilation, duplicating our streets without

much interfering with existing buildings. We might very conveniently remove our shops from the ground to the first floor. There is no reason why London-bridge should not have an iron scaffold railway, connecting the Blackwall line with the South-eastern, without interfering with the lower traffic, and without interfering with the beauty of the bridge.

I am, &c.,

W. BRIDGES ADAMS.

METROPOLITAN IMPROVEMENTS AND THE COAL TAX.

SIR,—In the discussion last week on Mr. Bennoch's paper, Mr. Haywood, advocating the continuance or extension of the coal tax, stated that this tax affects two classes; the poor and the rich, without pressing hard upon either of them, and that double the present amount might be raised with facility. He appears to have forgotten a third, and not unimportant class, the London manufacturers, including gas companies, water companies, engineers, &c. I believe our London consumption of coals is small compared with that of the large gas companies, but we find that even the present rate of tax, 1s. 1d. per ton, on a weekly consumption of more than 400 tons, amounting to more than £1,100 a year, to be a very serious charge.

Should, therefore, a London improvement fund be raised by a coal tax, we submit that a drawback should be allowed on coal used for purposes of manufacture.

We are &c.,

PRICE'S PATENT CANDLE COMPANY (Limited),
PER GEORGE F. WILSON, MANAGING DIRECTOR.
1st May.

DISINFECTANTS.

SIR,—The perusal of Dr. Smith's highly interesting and instructive paper on "disinfectants," read at the Society's ordinary meeting, on Wednesday, the 22nd April, afforded me much pleasure. The subject, to me, is one of considerable magnitude and importance, residing, as I do, in a locality which has so long been suffering from an awful epidemic.

The learned Doctor, in speaking of the valuable disinfecting compound, commonly known as "M'Dougall's Disinfecting Powder," makes special allusion to this unhappy town, and the dreadful disease which broke out amongst us last year, immediately after disturbing our sur-charged graveyard. "The whole town," he says, "was disinfected with this compound, which, it is stated, proved 'most efficient in staying the plague—the disease assumed a milder form, and eventually disappeared.'" I regret, however, to state, that this awful disease has not "disappeared," but is raging amongst us.

That a temporary relief may be obtained by a copious use of M'Dougall's disinfecting powder, is an unquestionable fact; but, without wishing to detract from its value, I fear there is a danger of applying it (as in Leek) as a substitute for the observance of nature's laws. We may use Dr. Smith's compound with advantage in dealing with the effects, but nothing but the preventive measures alluded to by Dr. Playfair, in the discussion, will ever enable us to remove the cause.

In the interesting discussion that followed the reading of Dr. Smith's paper, Mr. P. H. Holland (Medical Inspector, Burial Department of the Home Office), makes rather a startling reference to this notorious town. "With reference," says he, "to the case of the epidemic in the town of Leek, alluded to by Dr. Smith, he (Mr. Holland) was, in the first instance, somewhat uneasy, lest the outbreak of the disease in that locality should have been, in some degree, occasioned by his own neglect. He had been told that it arose in consequence of the disturbance of the churchyard there, which he ought officially to have got prevented. But he was happy to

find that he had been misinformed, for the medical men of the place assured him that the epidemic and the state of the churchyard had no connexion with each other."

Supposing the noxious gases sent floating over the town from the half-decomposed corpses, and the surcharged ground disturbed, to have been injurious to health, or, to any extent, the cause of the dreadful malady by which we are now suffering, I am at a loss to conceive how it can have been occasioned by Mr. Holland's neglect. This much I know, that as soon as the revolting account of the horrible proceedings in the churchyard was forwarded to the Home Office, the work was stopped. And if Mr. Holland is correctly informed that the disturbing of the churchyard and the epidemic had no connexion with each other, why was the churchyard pronounced so dangerous before it was disturbed? Why is the town put to the expense of providing a cemetery? Why are not the calculations and errors of the highest chemical and medical authorities in Europe exposed? Why are our local professors allowed to administer the very remedies such authorities prescribe, when the blood is said to be poisoned by such gases? If from 60 to 70 men rooting up a surcharged grave-yard in a town be a harmless thing, that has "no connexion" with disease, why are the local guardians of our health blamed for allowing the same kind of harmless gases to escape from the cesspools outside the town? Why trouble ourselves about disinfectants? If Mr. P. H. Holland be correctly informed, why does the State allow the General Board of Health to propagate its nonsense to the contrary? and why is the Registrar-General annually allowed to taunt us with his jargon to the same effect?

I am, &c.,

AN INHABITANT.

Leek, April 27, 1857.

P.S.—Justice compels me to add that our medical men have been most unceasing in their efforts to save, and it is hoped that our authorities will yet see fit to carry out the wise measures which they have vainly recommended.

Proceedings of Institutions.

GREENWICH.—Mr. C. W. Connon delivered a lecture to the members of the Literary Institution, on Tuesday, the 31st of March, on "American Slavery." A numerous audience gave evidence of the interest felt in the subject, and the respect entertained for the lecturer.

WATERFORD.—The annual report of the Mechanics' Scientific Institute was presented to the general meeting of the members held on the 26th day of February last. The Committee report that their efforts during the past year to promote the interests of the Institution have been attended with great success. They have devoted much attention to the Library. Nearly 1,500 volumes have been purchased, and 219 volumes and Parliamentary Reports have been presented. The average circulation has been 287 vols. per week, or 15,468 vols. per year; exceeding the circulation of the previous year by 5,744 vols. At the Reading and News rooms the attendance is progressively increasing. The following Courses of Lectures have been delivered:—By D. C. Bell, Esq., "Remarks on the Art of Delivering Readings from Shakspeare and the Christmas Carol" (four). By A. G. Melville, Esq., M.D., on "Natural History" (nine). By George Baker, Esq., on "Moore's Melodies," "Shakspeare's Songs," "Longfellow's Poems," and "Lays of Holyrood" (three). M. Gompertz also exhibited a Panorama of the late War. The attendance on each of these series of lectures exceeded anything ever before witnessed since the formation of the Institution; and the Committee urge upon their successors in office the de-

scribability of not confining their lectures exclusively to elementary science, but of engaging competent Professors on Literary subjects during the autumn and winter seasons. The English and Mathematical Classes, under Mr. Flynn, number nearly forty pupils, and the attendance thereat is both steady and respectable. The Committee regret that the attendance on the French Class has been greatly diminished, and it has, for the present, been discontinued. The Committee earnestly urge on their successors the necessity of making an effort to revive it, and suggest that the proprietors of all the large mercantile establishments of the city be waited on by a deputation from the Society, and solicited to use their influence with their young men who have not, as yet, availed themselves of the advantages offered. The income of the Institution for the past year has more than doubled that of the former one. The following gentlemen have been elected Vice-Presidents for the ensuing year:—The Dean of Waterford; Rev. John Crotty; Robert Keating, Esq., M.P.; John Mackesy, Esq., M.D.; Wm. M. Ardagh, Esq., J.P.; and Jas. Cavet, Esq., M.D. On the 1st inst., Mrs. Clara Balfour delivered a lecture on "Contrasts and Parallels in the Lives of Celebrated Women living at times of Great Revolutions in England, America, and France." Mrs. Balfour commenced with some introductory remarks, in which she called the attention of the audience to the side lights thrown by biography on the lives of historic characters, and that these side lights revealed the domestic position of the actor, and often influenced his career; as an illustration of this she painted in a rapid and instructive manner the family of Oliver Cromwell, dwelling particularly on his mother; she pointed out the loss of comfort and happiness that attended his elevation and success, and the unhappiness that resulted to his family from the constant dread of his being assassinated. Among the "Contrasts" she selected the lives of two eminent female writers of biography, one belonging to the Roundheads, and the other to the Cavaliers, who were similar in their misfortunes, though differing in their sentiments, and sketched the lives of Mrs. Hutchinson and Lady Fanshawe. Another of the contrasts in English life which she brought forward was that of Elizabeth Bunyan, and Lady Rachel Russell, each of whom during the trials of their husbands aided in their defence. Passing across the Atlantic she pictured the mother of George Washington, and described the effects of his early education, and then tracing the reaction of American on European politics, she passed under review four French ladies, Madame Roland, Charlotte Corday, Marie Antoinette, and Madame de Stael. The lecture was well attended.

MEETINGS FOR THE ENSUING WEEK.

- MOX. London Inst., 7. Mr. T. A. Malone, "On Photography; its present condition and most important applications." Geographical, 84. I. Lieut.-Colonel Waugh and Mr. B. H. Hodgson, "Trigonometrical Survey of India and Mount Everest." II. Col. Sir Henry C. Rawlinson, "On Mohamrah and the Chaab Arabs, with reference to the late operations at the mouth of the Euphrates."
- TUES. Royal Inst., 3. Dr. J. P. Lacaia, LL.D., "On Italian Literature—The *Cinquecento*—Lorenzo de Medici—Pozziano—Ariosto." Civil Engineers, 8. Mr. G. B. Bruce, C.E., "Description of the method of Building Bridges upon Brick Cylinders in India." Med. and Chirurg., 84. Zoological, 9.
- WED. Literary Fund, 3. London Inst., 3. Prof. Robert Bentley, "On Systematic Botany, with especial reference to the natural systems of arrangement." Society of Arts, 8. Mr. J. B. Smith, M.P., "On the means of obtaining increased supplies of Cotton." Graphic, 8. Microscopical, 8. Archæological Association, 84. Ethnological, 84. Mr. T. Wright, "On the Ethnology of the English Language."

- THURS. Royal Inst., 3. Prof. J. Tyndall, "On Sound, and some associated phenomena."
Philosophical Club, 5½.
Royal Society Club, 6.
London Inst., 7. Mr. T. W. Burr, "On the History and Instruments of the Royal Observatory at Greenwich; and of other celebrated Observatories and Instruments, with the principal discoveries made by their means."
Antiquaries, 8.
Royal, 8½.
- FRI. Royal Inst., 8½. Prof. Huxley, "On the present state of our knowledge of the Structure and Functions of Nerve."
- SAT. Royal Inst., 3. Prof. E. Frankland, "On the Relation of Chemistry to Graphic and Plastic Art."
Royal Botanic, 3½.
Medical, 8.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette, April 24th, 1857.]

- Dated 26th March, 1857.*
852. James Morris, Albert-square, Clapham-road—Certain Improvements in connecting the rails of railways.
854. François Rualem, 29, Rue de Paris, Belleville—Improvements in railway brakes. (A communication.)
- Dated 27th March, 1857.*
856. Alexander Delon, 39, Rue de l'Echiquier, Paris—An improved mould for the manufacture of buttons.
857. Edouard Hochstetter, Paris—The employment for motive purposes of sulphuret of carbon, an agent not hitherto so used. (A communication.)
858. Edmund Alexander Spurr, Newton-road, Bayswater—Improvements in fire-places, chimnies, and stove grates.
862. John Ward, Glasgow—Improvements in the manufacture or production of manures or fertilizing agents.
- Dated 28th March, 1857.*
864. David Thomson, Pimlico—Improvements in rotary pumps.
866. Ferdinand Jossa, St. Helen's Colliery, near Bishops Auckland, Durham—Improvements in furnaces and ovens for the prevention of smoke and for economy of fuel.
868. Robert Russell, Manchester—Improvements in railway turntables.
870. Louis Etienne Deplanque, 39, Rue de l'Echiquier, Paris—An improved composition for sharpening and setting fine-edged cutting instruments.
872. Joseph Thurstfield, Congleton, Cheshire—An improved water-ram for raising water.
- Dated 30th March, 1857.*
876. Joseph Scott, Glasgow—Improvements in bottles and their stoppering or closing details.
878. James Janson Cudworth, Ashford, Kent—Improvements in locomotive boiler furnaces.
880. Richard Handley Thomas, Kidsgrove, Stafford—Improved machinery for converting plastic substances into spherical forms or balls.
- Dated 1th April, 1857.*
869. William Neville, Jersey—Improvements in amalgamating certain substances for the production of fuel.
871. John Rothwell, Enfield, Middlesex, and Samuel Dixon Cooper, Westminster—Improvements in breech-loading fire-arms.
873. John Talbot Pitman, 67, Gracechurch-street—Improvements in apparatus called fire escapes. (A communication.)
875. Henry Dearden, Rochdale—Certain improvements in power looms for weaving.
877. Edward Finch, Bridge Works, Chepstow—An improvement in railway breaks.
879. William Sullivan Gale, New York—Improved means for rendering the joint of engines or other machinery steam or fluid tight.
881. Frederick Piercy and Samuel Flagg, 8, Belgrave-street, Argyle-square—A portable expanding life and military boat, which is also adapted for other purposes.
- Dated 8th April, 1857.*
885. Benjamin Hingley and Samuel Hingley, Cradley, Worcester—Improvements in anchors.
887. James Bird Sparke and Alfred Sparke, Thorne-lane Foundry, Norwich—Improvements in sawing machinery.
889. Edmund Edwards and Edward Beacher, Thorncliffe and Chapelton Iron Works, near Sheffield—Improvements in machinery or apparatus for washing or cleansing mineral and other substances.
891. Alfred Vincent Newton, 66, Chancery-lane—Improved machinery for cultivating land. (A communication.)
895. Donald Bethune, Cambridge-terrace, Hyde-park—Improvements in apparatus for preventing or consuming smoke in chimnies and furnaces.
- Dated 9th April, 1857.*
897. John Harland, 31, Shield-street, Newcastle-upon-Tyne—Purifying plastic clay used for the making of all kinds of earthenware, and for the cheaper and more expeditious manufacture of bricks, tiles, draining pipes, and other articles of clay of a similar nature or description.
899. John Atherton Molineaux, Brighton—Improvements in economising heat in locomotive and other high-pressure steam-engines.

1001. Augustus Frederiek Kynaston, 6, Osborne-place, Plymouth—Securing and disconnecting ships' boats and towing cables.
1003. Edwin Powley Alexander, 47, Lincoln's-inn-fields—Improvements in the manufacture of fulminating powder. (A communication.)
1005. Joseph Purnell, John-street West, Barnsbury—Improvements in apparatus for taking photographic pictures.
1007. William Clark, 53, Chancery-lane—An improved instrument for indicating the pressure of steam. (A communication.)
1009. William Armitage and Henry Lea, Farnley, near Leeds—Certain improvements in the manufacture of iron.
1011. John Beech, Shrewsbury, and John Williams, Wellington—An improved mode of securing the rails of railways in their chairs.
1013. John Coope Haddan, Cannon-row, Westminster—An improvement or improvements in the smelting and refining of iron. (A communication.)
- Dated 11th April, 1857.*
1015. Charles J. Bunker, New York—An improved life preserver, or life preserving shirt or sack.
1017. James Marrow, Sheerness—Improvements in machinery or apparatus for manufacturing bolts, rivets, nuts, and other similar forgings.
1019. John Matthews, Hurcott-mill, near Kidderminster—A new or improved vat, to be used in the manufacture of paper.
1021. Sebastien Didier Lheritier, Paris—Certain improvements in signals.
1023. Joseph England, Beverley, Yorkshire—Improvements in machinery for washing and wringing woven fabrics and similar articles.
1025. François Desir Lejard, Paris—An improved safety apparatus to be applied to the triggers of fire-arms.
1027. Thomas Wilton and John Huggett, Eastbourne—An apparatus for regulating the flow or supply of gas.
1029. Charles Sidney Johns, Barnard's-inn, Holborn—Improvements in preparing pulp for the manufacture of paper.
1031. Josiah Gimson, Leicester—Improved apparatus for preventing the explosion of steam boilers.
- Dated 13th April, 1857.*
1033. Jean Baptiste Pascal, Lyons, France—Improvements in electric lamps.
1035. Joseph Maurice, 316, Regent-street—Certain improvements in the fastenings, fixings, and attachments used for supporting or securing artificial teeth in the mouth.
1037. Joseph and Edmund Ratcliff, 59 and 60, St. Paul's-square, Birmingham—An improved mode or modes of adjusting chandeliers.
1039. William Edward Newton, 66, Chancery-lane—Improvements in the construction of boats, buoys, floats, or other buoyant vessels. (A communication.)
1041. Daniel Reading, Claverdon, Warwick—An apparatus for ventilating and increasing the draft in fire-places and flues.
1043. Pierre Victor Beaumesnil and Charles Erhard, 67, Rue Lafayette—A new and improved system of wheels for railway and other carriages.
1045. Charles Barlow, 89, Chancery-lane—Consuming the smoke and gases of furnaces, and at the same time furnishing a hot-air blast, being a smoke and gas consuming hot-air blast furnace. (A communication.)
1047. John Ramsbottom, Longsight, near Manchester—Improvements in wrought-iron railway chairs, and in machinery for manufacturing the same and other articles.
- Dated 14th April, 1857.*
1049. Peter Wicks, 10, Devonshire-street, Bloomsbury, and Thomas Goulston Ghislin, 7, Alfred-place, Blackfriars-road.—Superceding the use of bristles, cocoa fibres, flax, hemp, whale-bone, &c., to be styled and called an invention for adapting and applying the fibrous plants of South Africa for the purposes of manufacture.
1051. John Rubery, Birmingham—Improvements in the manufacture of umbrella and parasol ribs.
1053. Richard Archibald Brooman, 166, Fleet-street—Improvements in machinery for mixing, solidifying, pressing, and moulding. (A communication.)
1055. Robert Knowles, Manchester—Certain improvements in machinery or apparatus for winding yarn.
1057. John Henry Johnson, 47, Lincoln's-inn-fields, and 166, Buchanan-street, Glasgow—Improvements in machinery or apparatus for raising and forcing of fluids. (A communication.)
1059. Alfred Vincent Newton, 66, Chancery-lane—Improvements in carding engines.
1061. Henry Willis, Manchester-street, Gray's-inn-road—Improved machinery for supplying air to organs and free reed instruments.
- Dated 15th April, 1857.*
1063. John Coutts, Wellington lodge, Northumberland—An improved method of uniting together the parts of all kinds of floating bodies composed of metallic substances, as well as vessels for containing fluids, gases, &c.
1065. Alfred Vincent Newton, 66, Chancery-lane—Improved apparatus for taking the measurements for coats and other garments. (A communication.)
1067. Bonnet Frederick Brunel, Hampstead-road—Improvements in raising sunken vessels and other submerged structures and articles, and in machinery and apparatus employed therein.
1069. Thomas Richardson, Newcastle-upon-Tyne, and Manning Prentice, Stowmarket—Improvements in the manufacture of manure.

